



Testing in a Joint Environment: Implementing the Roadmap

Mr. Mike Crisp
Deputy Director, Air Warfare
Operational Test and Evaluation
December 2005

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE DEC 2005		2. REPORT TYPE		3. DATES COVERED 00-00-2005 to 00-00-2005	
4. TITLE AND SUBTITLE Testing in a Joint Environment: Implementing the Roadmap				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) the Office of the Secretary of Defense (OSD),Air Warfare,Operational Test and Evaluation,Washington,DC,20301				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES Modeling and Simulation Conference, 2005 Dec 12-15, Las Cruces, NM					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 15	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Inputs Needed From T&E Community

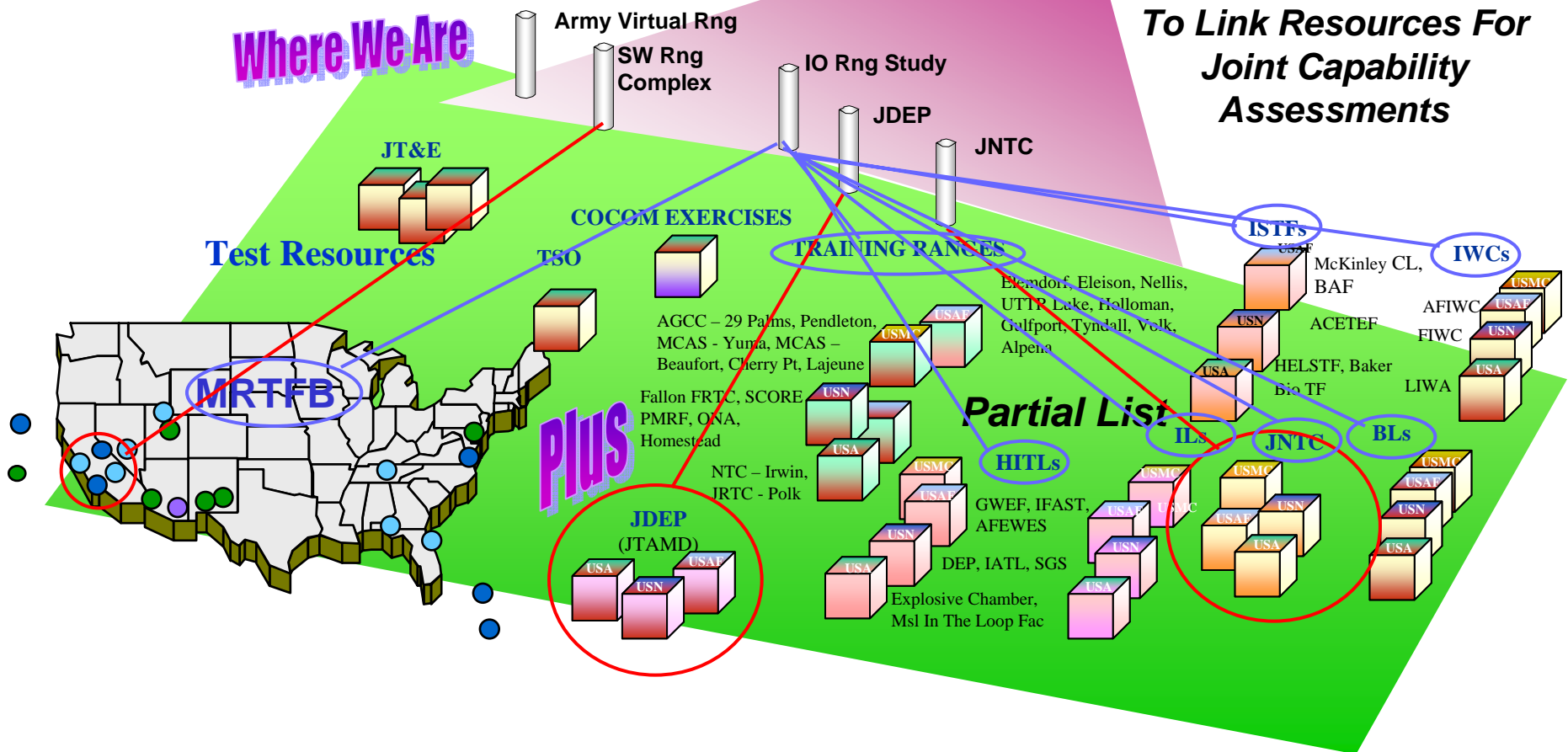
Requested by Director, OT&E at Last Year's Conference



- A proposal or set of recommendations on how the T&E community can better convey its needs to the M&S community's requirements process – specifically, what models does the T&E community need and what do we need the models to do for the T&E process?
- A proposal or set of recommendations on how we can respond to Tom Christie's call to do a better job of getting our operational evaluations to warfighters for operational planning and our actual system performance data to users of high-level models to refine their input data and assumptions.
 - How can we effectively feed back test data to the model developers to validate and upgrade their models?
- A proposal or set of recommendations on what we need to do to get the T&E community involved in the contracting process earlier in order to help guide the preparation of the RFP/RFI and the contract to foster sharing of data and information while affording contractor protection for truly proprietary intellectual property.



Where We Are

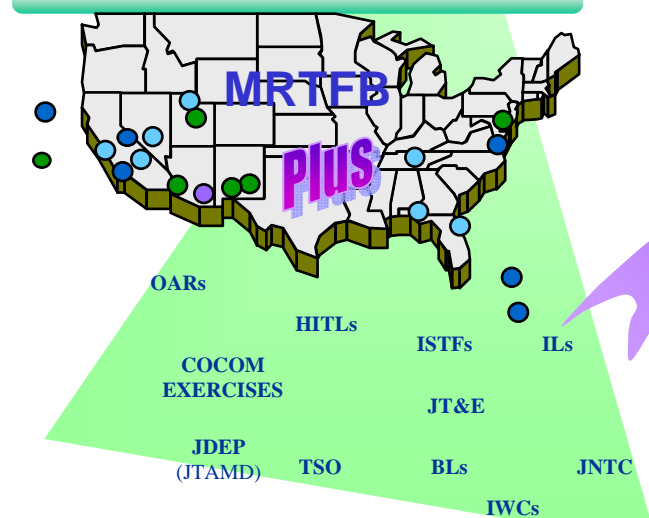




Creating Joint Capability Where We Need To Go

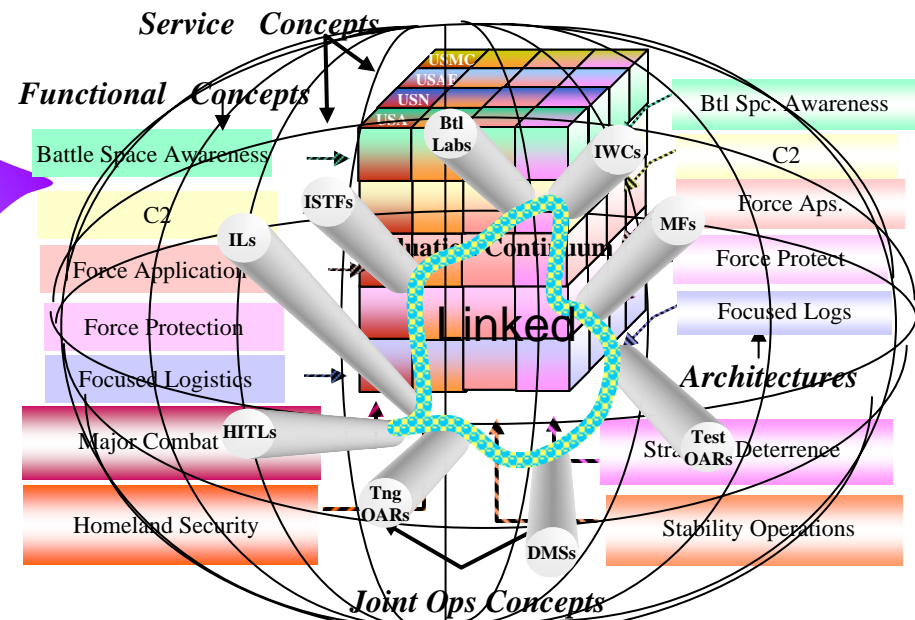


Test & Training Resource Infrastructure



**Joint Test and Training,
System Engineering Infrastructure**

**Where We Need To Go
Overarching Connectivity**



**Evolve to an Integrated Federation Of Live, Virtual, HWIL Resources To Develop (SE), Test,
& Train In A Network Centric, Joint Capabilities, Information Operations Environment**



Testing in a Joint Environment

Vision/Background



- **An adaptive, persistent, integrated, distributed, global T&E infrastructure**
 - Capable of providing robust and flexible T&E capabilities
 - Supports informative, effective, and timely transition of new capabilities to the warfighter
- **Strategic Planning Guidance (SPG), March 2004 – “Joint Testing in Force Transformation”**
 - **Policy** – Developing and fielding joint force capabilities requires adequate, realistic test and evaluation in a joint operational context
 - **Direction** – Department will provide new testing capabilities and institutionalize the evaluation of joint system effectiveness
 - **Action** – DOT&E lead development of a Roadmap to define changes to ensure that T&E is conducted in a joint environment and facilitates the fielding of joint capabilities
- **DepSecDef approved *Testing in a Joint Environment Roadmap*, Nov. 12, 2004**
 - **Validates SPG**
 - Programs must demonstrate required joint capability and interoperability/net readiness
 - Department must develop/provide corporate technical approach for distributed T&E
 - Directed development of an Implementation Plan



Testing in a Joint Environment

Joint Mission Environment Test Capability (JMETC)



- **JMETC – a persistent solution for distributed Joint T&E and Training**
 - Common toolset with capability to create the joint mission environment (JME) by integrating live, virtual, and constructive (LVC) components of a test scenario
 - Distributed environments will be customer-defined solutions for their specific need, not a set, prescribed environment
 - Will seamlessly integrate various existing nodes for each test application
 - Platforms, test ranges, laboratories (hardware- or software-in-the-loop), simulations of systems, units, or the geophysical environment, etc.
 - LVC components contribute to the resulting integrated JME, but are not part of JMETC
 - Technology embodied in JMETC already demonstrated
 - JMETC technology in use today by JNTC, IO Range, testers, and private sector
- **JMETC – a corporate test capability – not a network**
 - Does not compete with Department networks, or Global Information Grid (GIG)
 - JMETC solutions run as a customer on existing Department networks
 - Will impose no changes to such network infrastructure
 - Will be IPv6 enabled to migrate to the GIG
 - Compatible with the GIG Evaluation Facility (EF), not duplicative
 - JMETC solutions will be available as a toolset to the GIG developers and GIG-EF
- **System engineering, training, and experimentation will also benefit**



Testing in a Joint Environment Status



- **Change Proposal to fund development of JMETC was approved on November 30, 2005 – (Program Decisional Memorandum II - Pre-decisional)**
 - Fund a JMETC program beginning in FY 2007 with limited funding; Return in POM 2008 for enhancement to funding
 - Create and demonstrate a prototype JMETC capability during FY 2006
 - Identify the elements within JMETC concept to be illustrated; Establish prototype JMETC capabilities
 - Select 1-2 vignettes that illustrate JMETC capability - On-going activities under consideration include, but not limited to):
 - Army Cross-Command Collaborative Environment (3CE) events – Support to FCS
 - InterTEC Spiral One – Support to JSF
 - Missile Defense Lab integration – Support to MDA
 - JDEP Integrated Air & Missile Defense – Support to JTAMDO
 - JBMC2 thread event – Support to JFCOM
 - T&E participation in JNTC event, such as Weapons Tactics Instructor (WTI)
 - » Improve Test & Training Collaboration and JNTC Working Relationship
 - IO Range/Navy Use Case for Joint T&E – Support to USD(I)
- **In transition from DOT&E to TRMC; FY06 cross-cutting enterprise effort**



Testing in a Joint Environment

Re-evaluating/Revitalizing M&S



- **2007 Program Review Evaluating M&S Management DoD Wide**
 - Task AT&L and PA&E in coordination with Components, to develop recommendations for DoD-level M&S Management. Due NLT Feb, 2006:
 - Review DoDD 5000.59
 - Identify objectives, strategy, resources, and framework for metrics
 - Strategize M&S coordination
 - Currently, Acquisition, Training, and Analysis all have M&S working groups
 - Strategize centralized planning
 - OTICC, JT&E model
 - Following re-issuance of DoDD 5000.59, the "New" Executive Committee will address M&S-related requirements reflected in the current change proposals
 - Create an Interim Executive Committee to manage FY06 execution pending DoDD 5000.59 revision:
- **AT&L (Chair), OT&E, PA&E, P&R, Policy, and Joint Staff**
- **DMSO funded at current levels**



DoD M&S Related Activities

Substantial Investment



Category	FY05 \$B
Modeling, Simulation, and Wargaming*	\$0.500
Simulators	\$3.196
Identified Use of M&S Tools	\$3.808
Systems Engineering	\$1.679
NSBA (Navy Simulation Baseline Assessment) Identified PEs	\$0.178
Total	\$9.120

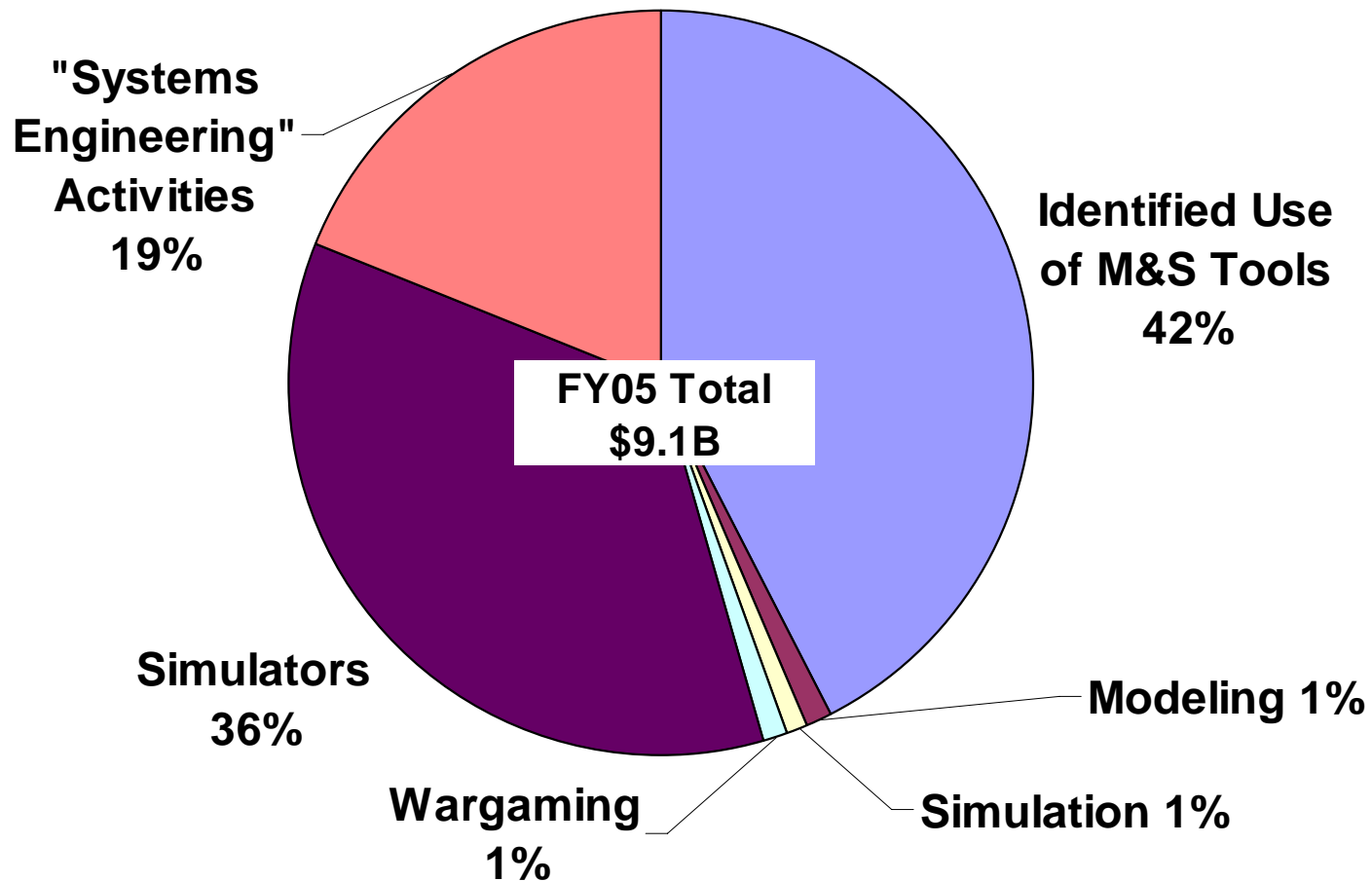
***Assumes FY05 Navy = 2/3 of FY03 Navy Baseline Assessment**
Source: IDA Cost Analysis Research Division (CARD)



Modeling & Simulation Related Activities



Represents FY05 budgets of activities / projects indirectly or directly associated with modeling, simulation, or wargaming.



Source: IDA Cost Analysis Research Division (CARD)



Inputs Needed From T&E Community

Requested by Director, OT&E at Last Year's Conference



- **A proposal or set of recommendations on how the T&E community can better convey its needs to the M&S community's requirements process – specifically, what models does the T&E community need and what do we need the models to do for the T&E process?**
- **A proposal or set of recommendations on how we can respond to Tom Christie's call to do a better job of getting our operational evaluations to warfighters for operational planning and our actual system performance data to users of high-level models to refine their input data and assumptions.**
 - How can we effectively feed back test data to the model developers to validate and upgrade their models?
- **A proposal or set of recommendations on what we need to do to get the T&E community involved in the contracting process earlier in order to help guide the preparation of the RFP/RFI and the contract to foster sharing of data and information while affording contractor protection for truly proprietary intellectual property.**



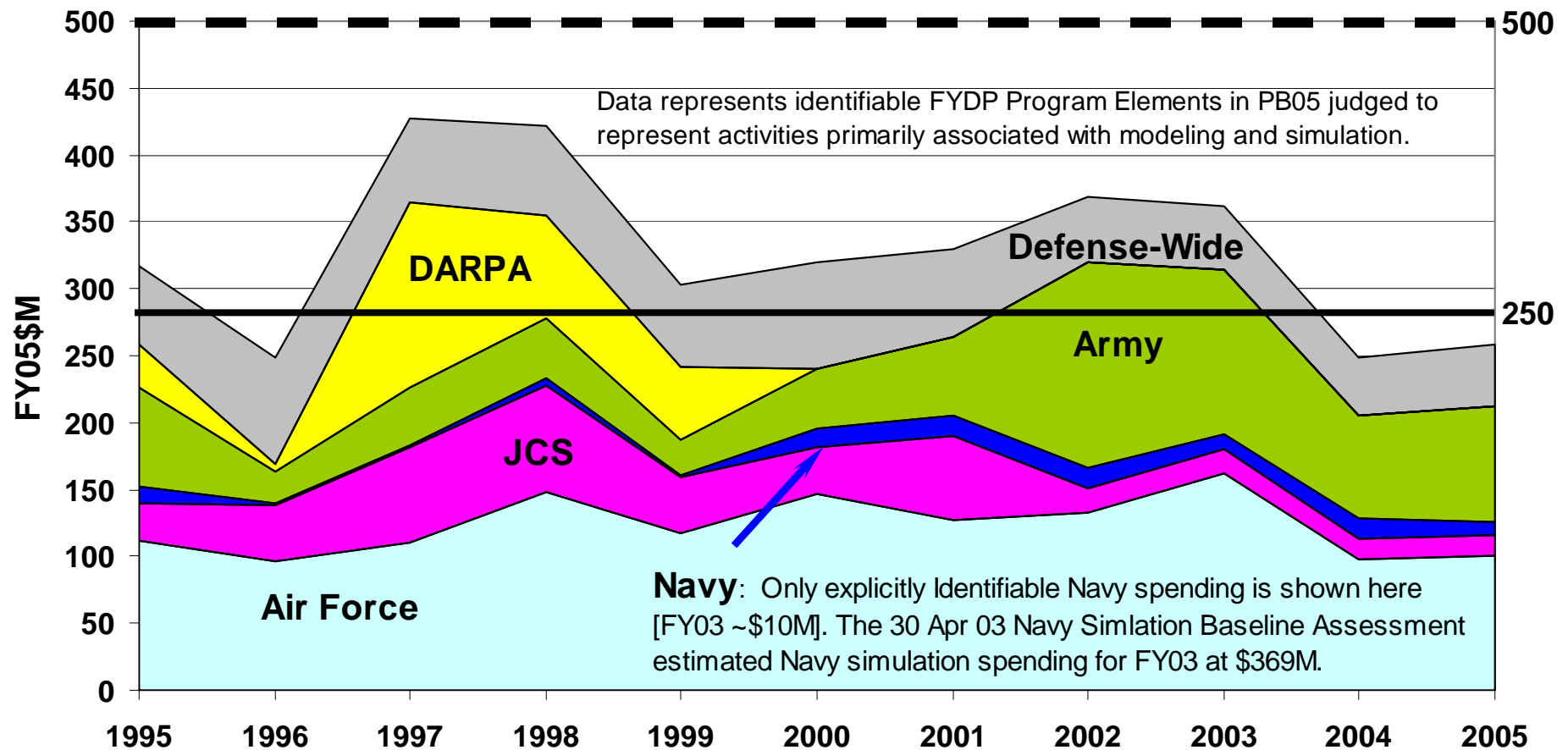
Back-Up Slides



Modeling, Simulation & Wargaming Agencies & Activities



Assume FY05 Navy = 2/3 of FY03 Navy Baseline Assessment



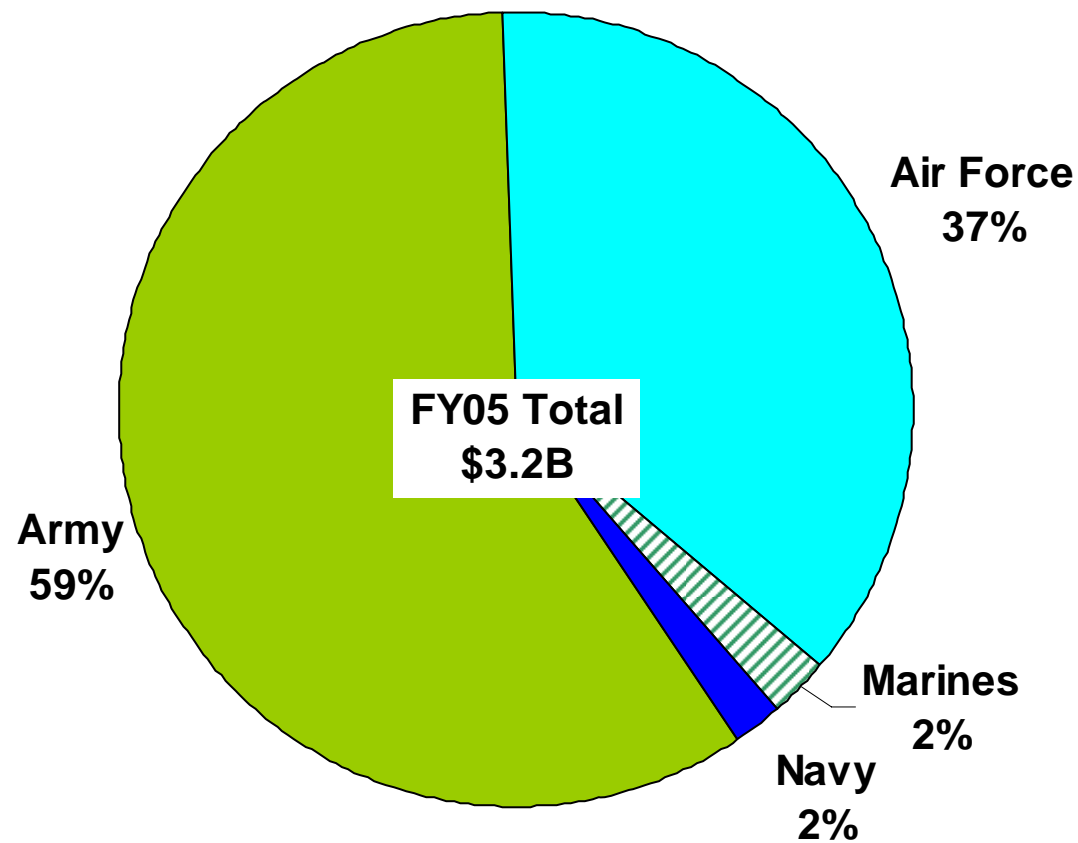
Source: IDA Cost Analysis Research Division (CARD)



Simulators



Represents the FY05 TOA associated with Program Element whose definitions make reference to "Simulators" [excluding electronic warfare "threat simulators"] used as training devices.



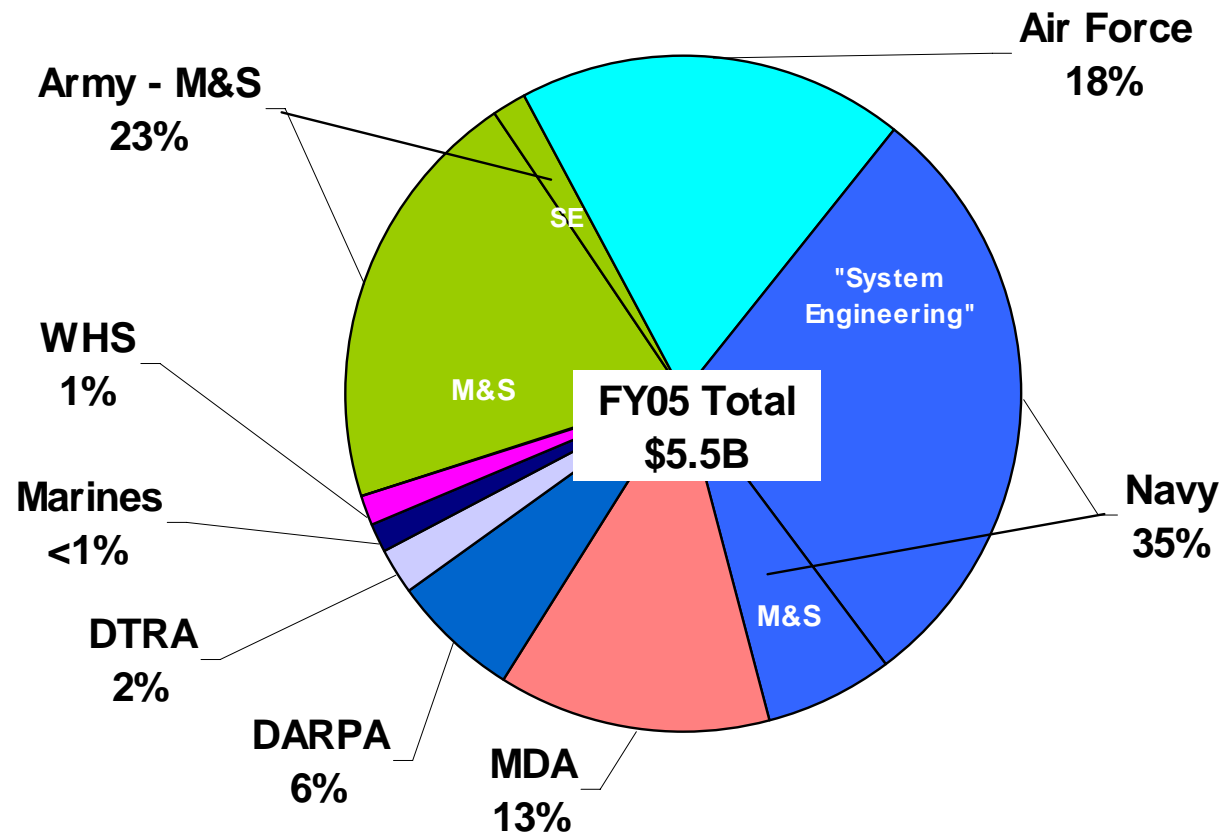
Source: IDA Cost Analysis Research Division (CARD)



Identified Use of M&S or “Systems Engineering” Methodologies



Data represents FY05 budgets associated with Program Element whose definitions make reference to use of Systems Engineering methodology or modeling, simulation or wargaming techniques as part of their activities



Source: IDA Cost Analysis Research Division (CARD)